AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of

claims in the subject application:

Listing of Claims

1-30.   (Cancelled)

31.   (Previously Presented) A method comprising:

in response to receiving a memory access request comprising a virtual

address and a key entry, locating a region in a translation and

protection table (TPT), the region being associated with a region

entry;

validating access to the region by comparing a first key field to a second

key field, the first key field associated with the key entry, and the

second key field associated with the region entry; and

if access to the region is validated, responding to the memory access

request in accordance with a region type field of the region entry.

32.   (Previously Presented) The method of claim 31, wherein said locating a

region in the TPT is based on an index field of the key entry.

33.   (Previously Presented) The method of claim 31, wherein access to the

region is validated if the first key field matches the second key field.

34.   (Previously Presented) The method of claim 31, wherein the region type field of the region entry comprises a window region associated with a window, and wherein said responding to the memory access request comprises:

determining if an access type associated with the memory access request is allowed;

if the access type is allowed, locating a translation entry corresponding to the memory access request based on the virtual address and a translation handle associated with the region entry;

validating access to the translation entry; and

determining a physical page address corresponding to the virtual address based on the translation entry.

35.   (Previously Presented) The method of claim 34, wherein said determining if an access type associated with the memory access request is allowed comprises checking a remote access rights field of the region entry.

36.   (Previously Presented) The method of claim 31, wherein the region type field of the region entry comprises one of a local region and a bindable region, and wherein said responding to the memory access request comprises:

locating a translation entry associated with the memory access request

based on the virtual address, a translation handle associated with

the region entry, and page size associated with the region entry;

validating access to the translation entry; and

determining a physical page address corresponding to the virtual address

based on the translation entry.

37.   (Previously Presented) A method comprising:

in response to receiving a memory access request comprising a virtual

address, locating a region in a translation and protection table

(TPT) associated with the memory access request, the region being

associated with a region entry, and corresponding to one or more

translation entries each corresponding to a physical address;

validating access to the region at a region level, and to one of the one or

more translation entries at a translation entry level, the one

translation entry corresponding to the memory access request; and

if access to the region and translation entry is validated, determining a

physical address corresponding to the virtual address.

38.   (Previously Presented) The method of claim 37, wherein the memory

access request comprises a key entry, and wherein locating the region in

the TPT comprises locating the region in the TPT based on an index field

of the key entry.

39.   (Previously Presented) The method of claim 38, wherein said validating access to the region comprises comparing a first key field to a second key field, the first key field associated with the key entry, and the second key field associated with the region entry.

40.   (Previously Presented) The method of claim 37, wherein said validating access to the translation entry corresponding to the memory access request comprises checking a protection domain field of the translation entry.

41.   (Previously Presented) The method of claim 37, wherein said determining a physical address corresponding to the one translation entry comprises:

using the virtual address, and a translation handle of the region entry to locate a translation entry; and

accessing the physical address from the determined translation entry.

42.   (Previously Presented) The method of claim 37, additionally comprising verifying if an access type associated with the memory access request is allowed at the region level, and at the translation level.

43.   (Previously Presented) The method of claim 42, wherein said verifying if an access type associated with the memory access request is allowed at the region level comprises checking a remote access rights field of the region entry.

44.   (Previously Presented) The method of claim 42, wherein said verifying if an access type associated with the memory access request is allowed at

the translation entry level comprises checking an access rights field of the translation entry.

45.   (Previously Presented) An apparatus comprising:

a network interface card (NIC) to:

in response to receiving a memory access request comprising a virtual address, locate a region in a translation and protection table (TPT) associated with the memory access request, the region being associated with a region entry, and corresponding to one or more translation entries each corresponding to a physical address;

validate access to the region at a region level, and to one of the one or more translation entries at a translation entry level, the one translation entry corresponding to the memory access request; and

if access to the region and translation entry is validated, determine a physical address corresponding to the virtual address.

46.   (Previously Presented) The apparatus of claim 45, wherein the memory access request comprises a key entry, and wherein locating the region in the TPT comprises locating the region in the TPT based on an index field of the key entry.

47.   (Previously Presented) The apparatus of claim 46, wherein said validating access to the region comprises comparing a first key field to a second key field, the first key field associated with the key entry, and the second key

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field associated with the region entry.

48.   (Previously Presented) The apparatus of claim 45, wherein said validating

access to the translation entry corresponding to the memory access

request comprises checking a protection domain field of the translation

entry.

49.   (Previously Presented) The apparatus of claim 45, wherein the NIC

determines a physical address corresponding to the one translation entry

by:

using the virtual address, and a translation handle of the region entry to

locate a translation entry; and

accessing the physical address from the determined translation entry.

50.   (Previously Presented) A system comprising:

a memory;

a memory controller coupled to the memory;

a network interface card (NIC) coupled to the memory controller to:

in response to receiving a memory access request comprising a

virtual address, locate a region in a translation and

protection table (TPT) associated with the memory access

request, the region being associated with a region entry, and

corresponding to one or more translation entries each

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corresponding to a physical address;

validate access to the region at a region level, and to one of the

one or more translation entries at a translation entry level,

the one translation entry corresponding to the memory

access request; and

if access to the region and translation entry is validated, determine

a physical address corresponding to the virtual address.

51. (Previously Presented) The system of claim 50, wherein the memory

access request comprises a key entry, and wherein locating the region in

the TPT comprises locating the region in the TPT based on an index field

of the key entry.

52. (Previously Presented) The system of claim 51, wherein said validating

access to the region comprises comparing a first key field to a second key

field, the first key field associated with the key entry, and the second key

field associated with the region entry.

53. (Previously Presented) The system of claim 50, wherein said validating

access to the translation entry corresponding to the memory access

request comprises checking a protection domain field of the translation

entry.

54. (Previously Presented) The system of claim 50, wherein the NIC

determines a physical address corresponding to the one translation entry

by:

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using the virtual address, and a translation handle of the region entry to

locate a translation entry; and

accessing the physical address from the determined translation entry.

55.   (Previously Presented) The system of claim 50, wherein the NIC

comprises a host fabric adapter.

56.   (Previously Presented) An article comprising a machine-readable medium

having machine-accessible instructions, the instructions when executed by

a machine, result in the following:

in response to receiving a memory access request comprising a virtual

address, locating a region in a translation and protection table

(TPT) associated with the memory access request, the region being

associated with a region entry, and corresponding to one or more

translation entries each corresponding to a physical address;

validating access to the region at a region level, and to one of the one or

more translation entries at a translation entry level, the one

translation entry corresponding to the memory access request; and

If access to the region and translation entry is validated, determining a

physical address corresponding to the virtual address.

57.   (Previously Presented) The article of claim 56, wherein the memory

access request comprises a key entry, and wherein locating the region in

the TPT comprises locating the region in the TPT based on an index field of the key entry.

58.   (Previously Presented) The article of claim 57, wherein said validating access to the region comprises comparing a first key field to a second key field, the first key field associated with the key entry, and the second key field associated with the region entry.

59.   (Previously Presented) The article of claim 56, wherein said validating access to the translation entry corresponding to the memory access request comprises checking a protection domain field of the translation entry.

60.   (Previously Presented) The article of claim 56, wherein said determining a physical address corresponding to the one translation entry comprises:

using a virtual address, and a translation handle of the region entry to locate a translation entry; and

accessing the physical address from the determined translation entry.